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Organizational Communication And Trust in the Context of Technology Change

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16. Abstract Open communication and organizational trust are important factors in the context of organizational technology change. Although previous research has addressed the relationship between technology change and open communication, and issues concerning organizational trust and open communication, few investigations adequately address the interplay between all factors simultaneously. The relationship between perceptions of organizational trust and communication, as well as other organizational variables, were examined within the context of significant technology change in a division of a large federal agency. Perceptions of open communication during technology change were predicted from the organizational variables. The results show that organizational trust, supervisory leadership style, workgroup cohesion, and acceptance of change were significant predictors for open communication. Results support the contention that, if issues and concerns related to open communication and organizational trust are neglected, particularly in times of change, they may undermine efforts that would otherwise facilitate a smooth transition. Identifying the importance of these relationships for the division allows management to concentrate on areas most likely to enhance the transition process as the organization undergoes technology change.			
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ORGANIZATIONAL COMMUNICATION AND TRUST IN THE CONTEXT OF TECHNOLOGY CHANGE

The Federal Aviation Administration's (FAA's) Civil Aviation Registry (herein referred to as the Registry) is responsible for developing, maintaining, and operating national programs to register aircraft and certify airmen. The duties of the Registry include, but are not limited to recording, storing, retrieving and reviewing basic documents necessary for the issuance of certification for pilots and aircraft, and for the repair and alteration of major aircraft components (i.e., engines, propellers, etc.). Currently, the Registry performs its tasks using primarily manual work methods and does not enjoy all of the advantages that a computerized storage and retrieval system can offer. The current method has served the Registry well since its inception. However, pressure to modernize the Registry has accrued due to the Drug Enforcement Assistance Act, which mandated a number of basic record keeping, procedural, and communications changes in the Registry. Additional pressure to modernize the Registry is increasing as the number of airmen, aircraft and transactions that must be certified increases. Accordingly, the Registry is undergoing a transition to a paperless office (herein referred to as modernization). The purpose of this study was to provide the Registry with a baseline to assess how perceptions of modernization affect employees and to identify potential barriers to change.

The new system will eliminate the need to move paper, microfiche, or microfilm between sections of the Registry, thereby reducing processing time and ensuring greater accessibility. Aircraft and Airmen Examiners will have immediate computer access to the information they need without having to manually request and obtain each physical document. In fact, complete aircraft and airmen records will be available in a digitally imaged format.

Organizational change, such as that taking place within the Registry, relies upon open communication and a free exchange of information. However, the effectiveness of such communication can be limited by what may be broadly described as the degree of trust that exists between the communicating partners and a number of related issues. In fact, a number of potential factors at different levels within an

organization may influence overall communication. Because communication within an organization is a key element in the implementation of any new technology, factors impeding effective communication at any level within the organization can undermine organizational change, such as modernization. Within the context of organizational change, overall communication is influenced by organizational level, workgroup level, and individual level perceptions.

Perception is a powerful force, but is often overlooked at the organizational level. Perceptions of organizational trust and supervisory leadership style at this level may influence communication processes in the context of change. O'Reilly and Roberts (1974) developed a model, later modified by Muchinsky (1977), reflecting the strength and form of the relationship between trust and communication at the organizational level. Negative perceptions of leadership or trust may interfere with the exchange of information necessary for smooth transitions in the workplace. Jablin (1979) observed a close correspondence between the communication behavior of supervisors and communication effectiveness. Sekhar and Anjaiah (1995) suggested that the relationship between organizational communication and trust influences organizational effectiveness, workgroup adjustment, and problem-solving effectiveness. For example, employees may discount messages from management if there is a lack of organizational trust.

Despite reports in the communication literature emphasizing the importance of building trust and positive perceptions of leadership in the organization, the recommendations to do so are rarely put into practice. Clampitt (1991) reports that the common management approach toward leading change is to assess the need for change and dictate that change be implemented through a chain of command. This approach contains the implicit assumption that those in leadership may better recognize the need for change, know what needs to be changed, and know how to implement change. One possible outcome of such an approach is a less effective top-down or hierarchical communication environment.

Perceptions of cohesive workgroups and satisfaction with social rewards are also expected to influence the overall communication environment. The significance of group phenomena in organizational functioning, such as individual reactions to and perceptions of the workplace, have been well documented (Hackman, 1976; Hackman & Morriss, 1975; Likert, 1961; Porter & Lawler, 1965). An individual's social and work environment are affected by those with whom the individual works on a daily basis. Workgroups have a significant effect on employee feelings about the workplace and performance.

Attempts to understand employee perceptions of change and its impact at the individual level may open the lines of communication and effectively help to overcome possible resistance to change. However, employee reactions to change cannot be predicted on the basis of change itself; rather, the recommendation to management is to focus on individual circumstances (Clampitt, 1991). Communication processes are expected to be open and free-flowing when employees perceive that they have some influence over work activities and have a perceived sense of self-satisfaction with the work they perform. The perception of influence over work and satisfaction with work performed may allow employees to look beyond personal interpretations and share in the corporate vision.

Hypotheses

A common recommendation for successful implementation of new technology is to involve end users in decisions regarding the implementation process (Endsley, 1994; Majchrzak, 1992; Smith & Carayon, 1995). Although previous research has addressed the relationship between technology change and communication (Burkhardt, 1994; Ford & Ford, 1995), and issues concerning trust and communication (Butler & Cantrell, 1994; Kramer, 1993; Mishra & Morrissey, 1990; O'Reilly, 1978; Penley & Hawkins, 1985; Sekhar & Anjaiah, 1995; West, 1980), few investigations adequately address the interplay between multiple factors simultaneously. This study was based on a survey to examine the relationship between perceptions of trust and communication, as well as other issues that are expected to be related to trust and communication within the context of organizational technology change. The value of the survey depends on the future assessment of similar constructs.

Several hypotheses were tested during early phases of the Registry modernization program:

- *Hypothesis 1.* Perceived effectiveness of open communication will increase as perceived levels of organizational trust and a positive supervisory leadership style increase.
- *Hypothesis 2.* Perceived workgroup cohesion and satisfaction with social rewards will increase as perceived levels of organizational trust and open communication increase.
- *Hypothesis 3.* Perceived level of one's influence over work activities, and satisfaction with internal rewards will increase as the perceived level of open communication increases.
- *Hypothesis 4.* Openness to change, acceptance of change, and active participation in the change process will increase as perceptions of open communication increase.

METHODS

Subjects and Organization

A total of 120 employees (96% of the overall workforce; 14 management and 106 non-management) responded to a survey measuring relevant organizational factors as part of a pre-change baseline measure. All surveys were completed during normal business hours. Surveys were administered to groups of 5 to 15 employees over the course of several days. A researcher was available to explain the procedure, answer questions, and explain the anonymous and confidential nature of responses.

Measures

The survey presented a standardized list of items with Likert-type response scales to enable the examination of open communication and other factors. The 10 survey dimensions included open communication, organizational trust, supervisory leadership style, workgroup cohesion, satisfaction with social rewards, influence over work activities, satisfaction with internal rewards, openness to change, active participation in the change process, and acceptance of change. The items on each dimension are presented in Appendix A.

Open Communication. This dimension examines the degree to which communication flows freely between coworkers, and between supervisors and

subordinates (Seashore, Lawler, Mirvis, & Cammann, 1983, p. 101). High scores indicate a favorable perception of open communication. The dimension included three items with a seven-point response scale ranging from 1 = strongly disagree to 7 = strongly agree.

Organizational Trust. An organizational trust dimension was used to assess the overall level of trust respondents have in management (Seashore, Lawler, Mirvis, & Cammann, 1983, pp. 82-83). High scores indicate a positive perception of the level of trust. A perceived climate of trust contributes to organizational effectiveness and a more productive work environment (Mishra & Morrissey, 1990). The dimension included four items with a seven-point response scale ranging from 1 = strongly disagree to 7 = strongly agree.

Supervisory Leadership Style. This dimension was used to measure the quality of the supervisor-subordinate relationship when work assignments were made (Taylor & Bowers, 1972, pp. 47-60). High scores indicate a positive perception of supervisory leadership style. The supervisor commonly influences the nature of the tasks to be performed, as well as the people who perform the tasks. In most organizations, the supervisor determines the subordinate's work load, and under certain circumstances can have a significant impact upon work performance (Cammann, Fichman, Jenkins, & Klesh, 1983). The dimension consisted of eight items with a seven-point response scale ranging from 1 = strongly disagree to 7 = strongly agree.

Workgroup Cohesion. This dimension reflects the degree to which employees or respondents work with or compete against each other. The dimension included four items with a seven-point response scale ranging from 1 = strongly disagree to 7 = strongly agree. High values indicate a positive work-group climate.

Satisfaction with Social Rewards. This dimension was used to assess how satisfied respondents are with the general interactions they have with coworkers (Seashore, Lawler, Mirvis, & Cammann, 1983, p. 89). The dimension consisted of three items with a seven-point response scale ranging from 1 = very dissatisfied to 7 = very satisfied. High scores indicated satisfaction with coworker interactions.

Influence over Work Activities. This dimension measures the amount of perceived control respondents have over their daily workload. High scores reflect a high degree of perceived control over work activities (Seashore, Lawler, Mirvis, & Cammann, 1983, p. 193).

The dimension included three items with a seven-point response scale ranging from 1 = No say at all to 7 = A very great deal of say.

Satisfaction with Internal Rewards. This dimension reflects the extent to which respondents are satisfied with the internal rewards (i.e., self-satisfaction) they obtain from successfully completing their work (Seashore, Lawler, Mirvis, & Cammann, 1983, p. 89). High scores reflect satisfaction with internal rewards. The dimension consisted of three items with a seven-point response scale ranging from 1 = strongly disagree to 7 = strongly agree.

Openness to Change. This dimension indicates the degree to which respondents welcome changes in their work setting and in the way they do work. High scores indicate an openness to change. The dimension included three items with a seven-point response scale ranging from 1 = strongly disagree to 7 = strongly agree.

Active Participation in the Change. This dimension estimates the general sentiment of respondents toward participation and involvement in projects related to the transition process. Low scores on this dimension indicate possible respondent resistance to active participation in modernization projects, while high scores indicate respondent desire for active participation. The dimension consisted of four items with a seven-point response scale ranging from 1 = strongly disagree to 7 = strongly agree.

Acceptance of Change. This dimension assesses respondents' general reaction to change; high scores indicate a positive reaction. The dimension consisted of six items with a seven-point response scale ranging from 1 = strongly disagree to 7 = strongly agree.

RESULTS

Statistical properties of each survey dimension and correlations of these dimensions with open communication are presented in Table 1. Cronbach alphas (a) were calculated for each dimension, and Pearson

bivariate correlations were calculated between the independent and dependent variables. Cronbach's α is interpreted as a correlation coefficient to indicate the level of internal consistency for each dimension (i.e., the degree of interrelatedness among the items). The α levels for dimensions presented in Table 1 range between .67 and .94, and fall within the acceptable range for research purposes (Schmitt, 1996).

Organizational, workgroup level, and individual factors from the survey were regressed onto the six-item communication dimension to examine the relationship between open communication and other factors relevant to the Registry's change process. Four dimensions were included in the final regression model: organizational trust, supervisory leadership style, workgroup cohesion, and acceptance of change. Results from the stepwise regression analysis for survey dimensions and open communication are presented in Table 2, as are standardized regression coefficients. The stepwise multiple regression yielded a significant coefficient of determination for the four scales ($R^2 = .686, p < .001$).

Four hypotheses were tested to identify predictors for perceived openness in communication during organizational technology change. In support of the first hypothesis, the regression analysis showed that organizational level factors of organizational trust and supervisory leadership style were both found to be significant predictors of open communication. Therefore, as perceived levels of organizational trust ($R^2 = 0.317, p < .001$) and supervisory leadership style ($R^2 = 0.224, p < .001$) increase, the perceived flow of information increases. Organizational trust has a greater partial effect on open communication effectiveness than does supervisory leadership style, workgroup cohesion, or acceptance of change scores.

In support of the second hypothesis, a significant correlation was found between open communication and the two workgroup level factors of workgroup cohesion ($r = 0.569, p < .05$) and satisfaction with social rewards ($r = 0.567, p < .05$). Workgroup cohesion was found to be a significant predictor for perceived open communication ($R^2 = 0.248, p < .001$). Significant relationships were also found between organizational trust and workgroup cohesion ($r = 0.457, p < .05$), and between organizational trust and satisfaction with social rewards ($r = 0.483, p < .05$).

In support of the third hypothesis, significant relationships were found between the perceived level of open communication and individual level factors of perceived influence over work activities ($r = 0.306, p < .05$) and satisfaction with internal rewards ($r = 0.584, p < .05$).

Finally, there was support for the fourth hypothesis that the perception of open communication is related to acceptance of change ($r = 0.667, p < .05$) and active participation in the change process ($r = 0.528, p < .05$). Acceptance of change was also found to be a significant predictor for perceived open communication ($R^2 = 0.282, p < .001$).

CONCLUSIONS

Survey data were used to answer some general questions about the communication environment and perceived characteristics of organizational factors affecting communication within the Registry. This study contributes to the body of research on organizational communication by simultaneously exploring the interplay between open communication, organizational trust, and technology change.

Communication issues and concerns are pervasive in all organizations. Porter and Roberts (1976) pointed out the complexity involved in gaining an adequate understanding of communication problems in an organizational context. Recognition of the complex impact of change, as perceived at different levels within the organization, is a first step toward fostering progress and preventing any potentially negative consequences (Roskies, Liker, & Roitman, 1988).

Perceptions of Modernization

The moderate baseline dimension averages and standard deviations suggest that the employees are open to and accepting of the changes in the Registry. Furthermore, many respondents indicated a willingness to participate in the necessary changes. The data also suggest that Registry workers are satisfied with work relationships and enjoy the work they perform. In fact, average scores for all of the organizational dimensions fell within a moderate range, indicating an overall readiness for change.

Table 1. Statistical Properties of Scales and Correlations of Scales With Open Communication.

Scale	Number of Items per Scale	Mean	Standard Deviation	Cronbach Alpha Reliabilities	Correlations With Communication
Open Communication	6	3.87	1.37	.84	.
Organizational Trust	4	3.60	1.31	.73	.726
Supervisory Leadership Style	8	5.06	1.26	.92	.557
Workgroup Cohesion	4	4.51	1.58	.92	.569
Satisfaction With Social Rewards	3	5.10	1.35	.94	.567
Influence Over Work Activities	3	4.37	1.71	.89	.306
Satisfaction With Internal Rewards	3	4.79	1.42	.89	.584
Openness to Change	3	4.22	1.39	.72	.592
Active Participation in the Change	4	4.78	1.21	.67	.528
Acceptance of Change	6	4.08	1.13	.79	.667

* All correlations are significant at $p < .05$.

Table 2. Stepwise Regression Analysis for Work Dimensions and Open Communication: Standardized Regression Coefficients and ΔR^2 s.

Open Communication	Standardized Beta	Model R^2	Model ΔR^2	F	$p <$
Trust	.317	.525	.	131.672	.001
Supervisory Leadership Style	.224	.596	.071	88.045	.001
Cohesion	.248	.637	.041	69.898	.001
Acceptance of Change	.282	.675	.038	62.151	.001

Coefficients reported here are those in the final model after all variables have been entered.
All $p \leq .001$. ($R^2 = .686$, $p \leq .001$).

Barriers to Change: Communication and Trust

The analyses indicated that ratings for both open communication and trust fell within a moderate range, and that trust is an important determinant of effective open communication. These results are consistent with previous studies that emphasize the relationship between trust and communication (Butler & Cantrell, 1994; O'Reilly & Roberts, 1974; Penley & Hawkins, 1985; Sekhar & Anjaiah, 1995). However, because an open exchange of information will be of paramount importance as the Registry moves toward modernization, the overall results suggest that improving the open communication process may facilitate the success of the Registry's modernization plan. Therefore, if these issues and concerns are neglected, particularly in times of change, they may undermine efforts that would otherwise facilitate a smooth transition.

Effective communication, in the context of change, requires more than simply providing information. However, further investigation is necessary to determine factors that will facilitate the development of trust and acceptance. One issue that has received some attention is the type of interaction between decision makers (i.e., managers and supervisors) and individuals who will experience the impact of change (i.e., the workforce). For example, Burkhardt (1994) conducted a longitudinal study of interaction patterns that influence attitudes toward organizational technology change. In that study, Burkhardt found that attitudes about technological change were influenced more by individuals with similar job roles than by individuals who may happen to work in close proximity but are not performing the same type of work.

Ford and Ford (1995) suggested that conversations for generating understanding of the change process have a three-fold function: 1) to specify the conditions for achieving satisfactory change; 2) to increase involvement, participation, and support on the part of those engaged in the change; and, 3) to translate events, instill meanings, and develop shared understandings. The combined effect of increased interactions and intentional conversations on the part of management may assist in building trust by creating a shared understanding among participants and produce a clear statement of conditions and expectations for the change.

Several previous studies of organizational technology change emphasize the positive effects of informing end users about plans regarding new technologies (Endsley, 1985; Karsh, 1997; Rouse & Morris, 1986). However, results from the present study suggest that providing information alone is not likely to resolve communication issues associated with the implementation of the new technology. Therefore, to ensure a successful transition, Registry management will need to monitor trust and encourage open communication practices. Identifying the importance of these relationships for the Registry allows management to concentrate on areas most likely to enhance the transition process as the organization moves to a paperless office.

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APPENDIX A

Communication

1. My coworkers are afraid to express their real views.
2. If we have a decision to make, everyone is involved in making it.
3. We tell each other the way we are feeling.
4. In my work group, everyone's opinion gets listened to.
5. In the Registry, people say what they really mean.
6. We are encouraged to express our concerns openly.

Supervisory Leadership Style

When making decisions about work assignments, my immediate supervisor . . .

1. . . . encourages subordinates to participate.
2. . . . encourages people to speak up when they disagree.
3. . . . is receptive to my suggestions.
4. . . . allows me the freedom to structure my daily activities.
5. . . . takes into consideration my workload.
6. . . . understands what is required for me to do the job.
7. . . . takes my strengths and weaknesses into consideration.
8. . . . sets clear expectations about what is required.

Actual Influence of Work Activities

How much influence do you actually have over daily decisions about . . .

1. . . . how you do your own work?
2. . . . changing how you do your work?
3. . . . how work-related problems are solved?

Acceptance of Change

1. Changes here always seem to create more problems than they solve.
2. When changes are made in this organization, the employees usually lose out in the end.
3. It's really not possible to change things around here.
4. I think that changes in this organization tend to work well.
5. My coworkers readily adjust to technological changes.
6. Good ideas are implemented quickly by my coworkers.

Organizational Trust

1. The Registry will take advantage of you if you give it a chance.
2. When the management of the Registry says something, you really can believe it's true.
3. I feel I can trust the people at the Registry.
4. People at the Registry will do anything behind your back.

Cohesion

1. Communicating with co-workers is easy.
2. Members of my work group have a strong sense of unity.
3. Members of my work group generally trust each other.
4. My work group demonstrates team spirit.

Satisfaction with Social Rewards

How satisfied are you with . . .

1. . . . the friendliness of the people with whom you work.
2. . . . the respect you receive from the people with whom you work.
3. . . . the way you are treated by the people with whom you work.

Satisfaction with Internal Reward

How satisfied are you at work with . . .

1. . . . the chances you have to learn new things?
2. . . . the chances you have to accomplish something worthwhile?
3. . . . the chances you have to do something that makes you feel good about yourself as a person?

Active Participation in the Change Process

1. I will do what I can to help the modernization.
2. I feel personally involved in the modernization.
3. I am not willing to work on the modernization.
4. I have time to work on the modernization activities.

Openness to Change

1. My co-workers are encouraged to develop and try new ways of doing things.
2. My co-workers develop new ways to address old problems.
3. Most changes lead to improvements in the way we work.